UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

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VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

James C. Brown, Manager
Environmental Affairs Department
Olin Chemicals
Post Office Box 248
Charleston, Tennessee 37310

SUBJ: EPA Comments on the Remedial Investigation Report
McIntosh Plant Site Olin Corporation McIntosh, Alabama

Dear Mr. Brown:

In accordance with Section VIII of the Administrative Order by Consent ("AOC") between Olin Corporation ("Olin") and the U.S. Environmental Protection Agency, Region IV ("EPA"), EPA has reviewed Olin's July 30, 1993 resubmission of the Remedial Investigation Report McIntosh Plant Site Olin Corporation McIntosh, Alabama ("RI").

The risk assessment portion of the RI is disapproved. Olin is directed to modify the portions of the RI report as identified by EPA in Enclosure A within 15 days of Olin's receipt of this notice of disapproval. Olin is advised to make no additional modifications unless specifically directed to do so. I understand from discussions with William Beal of Woodward Clyde that modifications which were previously requested by EPA were mistakenly not included in the July 30, 1993 version of the document. Please provide five copies of these revisions to me under a separate cover.

The revisions to the risk assessment portion of the document should be submitted as five unbound copies of revised Section 6 and appropriate appendices. If you require clarification about EPA's comments on the risk assessment, please contact Julie Keller at (404) 347-1586. Any modifications to these comments which result from clarifications by Ms. Keller must be cleared through me prior to finalization of the revision.

If you have any questions, please feel free to call me at (404) 347-2643.

Sincerely,

Kenneth A. Lucas
Remedial Project Manager
South Superfund Remedial Branch

Enclosure

cc: Justin Martindale, ADEM w/enclosure

APPENDIX A

Sections 6.3.5, 6.8, 6.9.5 - Remedial Goal Options

RGOs must be developed by rearranging the site-specific average-dose equation used in the baseline risk assessment to solve for the concentration term; RAGS Part B is not appropriate at this stage in the risk assessment process.

Remedial goal options (RGOs) are not the same as preliminary remediation goals (PRGs). Preliminary remediation goals are established at scoping for toxic substances known to be present at the site. Calculation of PRGs should be done in accordance with "Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Part B. Development of Risk-based Preliminary Remediation Goals."

Section 6.4.2, Identification of Chemicals of Potential Concern, page 6-7

Paragraph 3 should be changed to reflect that potential exposure scenarios are not of concern in the selection of chemicals of potential concern. Data summary tables must be presented for all media sampled; surface soil is noticeably absent from the list of media presented in paragraph 3.

Section 6.4.2.2, Chemicals of Potential Concern, OU-2 Surface Water, page 6-11

The basis for the statement that arsenic is present at levels that approximate background concentrations at the site is unclear. Background data must be included in Table 6-3. Clarify the reference for background concentrations at the site.

Section 6.4.2.2, Chemicals of Potential Concern, Other Media, page 6-11

Tabulate surface soil data similar to that of other media.

Section 6.5.1.3, Potential Receptor Populations, page 6-14

Evaluation of onsite soil exposures should be added to the end of the first paragraph. The second paragraph of this section should be revised to more clearly present the receptor populations. As stated previously, the child scenario should be for a child aged 0 to 6 years.

Section 6.5.1.4, Exposure Points, page 6-15

Much of the information included in this section is relative to uncertainties involved in the risk assessment process. These discussions should be moved to the uncertainties section.

Section 6.5.2, Exposure Point Concentrations, pages 6-21 through 6-25

The first bullet in this section states that wells considered non-potable were included in the assessment; it should be noted that the facility considers these wells non-potable due to chloride contamination from site related activities.

The 10 percent adjustment factor applied to the mercury exposure point concentration, in the second bullet, to account for the limited time any industrial worker would be present in the area of mercury contamination should be removed from this bullet. It is not appropriate to adjust the concentration relative to exposure duration or frequency issues; these adjustment should be in the intake equation and not in the exposure point concentration. Similarly, the exposure point concentrations for dermal exposures to surface water, domestic well water, and groundwater should not be calculated using chemical-specific dermal permeability constants; the chemical-specific dermal permeability constants should be used in the intake equation. The chemical-specific dermal permeability constants referenced to Appendix N4 in missing. They must be included in the revised document.

Section 6.5.3.2.3, Groundwater Ingestion Exposure Assumptions, page 6-28

Assumptions for the average scenario are more appropriately presented in an appendix rather than the main body of the report.

Section 6.5.3.2.4, Dermal Exposure Assumptions, pages 6-28 through 6-31

The application of the dermal permeability constants, listed in bullet 4, to the calculation of chemical intakes is not clear. Appendix N4 indicates that a permeability constant of 1 was used in the intake factor equation for adult dermal contact with domestic well water and a permeability constant of 0.015 was used for adolescent dermal contact with surface water. Additionally, these values should be referenced.

Much of the information presented in bullet 5 should be moved to the uncertainties section of the document. Bullet 8 should be removed from the text since matrix effect factor is included in the absorption factors of 1.0% for organics and 0.1% for inorganics.

Section 6.5.3.2.5, Soil Ingestion Exposure Assumptions, page 6-31

Section 6.5.3.2.5, Soil Ingestion Exposure Assumptions, page 6-31

The soil ingestion rate for adults in the residential scenario should be 100 mg/day not 50 mg/day. **As previously stated, young children (0-6 years) must be evaluated for the future residential on-site scenario. The child ingestion rate should be 200 mg/day for a child aged 0 to 6 years.** By presenting the child as aged 0 to 20 the childhood ingestion of 200 mg/day is diluted over 20 years resulting in a much lower HI for soil ingestion. For example, the HI for ingestion of surface soil from OU-1 for the RME scenario increased from 2 to 5 by eliminating the 20 year dilution.

Section 6.5.4.2.6, Fish Ingestion Exposure Assumptions, page 6-35

The matrix effect must be eliminated from the fish ingestion exposure assumptions.

Section 6.7.2.2, Risk Calculations, page 6-49

Reference to the average scenario must be removed from this section. A discussion of the average scenario is appropriate in the uncertainties section along with presentation of the data in an appendix.

Section 6.8, Remedial Goal Options, page 6-54

In this section and throughout the document the distinction between "likely future" and "hypothetical future" must be eliminated.

PRGs are not RGOs; see comments on Section 6.3.5 relative to the development of RGOs. RGOs must be developed for each scenario with pathways exceeding a 10^{-4} risk level or a HI of 1. For this site this would include both the child resident and the adult resident scenarios. The criteria for inclusion of individual chemicals should be those exceeding the 10^{-6} (not 10^{-4}) risk level and those with HQs exceeding 0.1. The site-specific risk equations must be rearranged to solve for the concentration in the development of RGOs; RAGS Part B should not be used.

Section 6.9.2.3, Data Evaluation, page 6-56

As stated previously, benzene should not be included in the contaminants of potential concern for sediments since it was not detected in this media.

Section 6.9.5, Remedial Goal Options, page 6-66

This section contradicts Section 6.8 in that this section indicates that site-specific assumptions were used in the calculation of RGOs while Section 6.8 indicates that the procedures in RAGS Part B were utilized for the development of RGOs. Also, the PRG terminology should be eliminated from this section.

Table 6-1

Footnote 2 does not appear to make sense.

Table 6-2

It is unclear if the data in this table is surficial soil or sediments data.

Table 6-6

The format of this table should follow RAGS Exhibit 5-7. Also, data summary tables should be presented for all media included in this table.

Table 6-10

As stated previously, benzene should not be included in the contaminants of potential concern for sediments since it was not detected in this media.

Table 6-14

This table should reference the permeability constants.

Table 6-16

The adult resident and resident/trespasser ingestion rates should be 100 mg/day. The parameters for the child must be changed as follows: 200 mg/day soil ingestion, 6 year exposure duration, 15 kg body weight, and 2190 days averaging time.

Section 6 Tables

The child body weight, exposure duration, ingestion rates and noncarcinogenic averaging times must be changed as per the Table 6-16 comment.

Table 6-33

The referencing included in this table is unclear. As previously stated, this table should indicate which values were obtained from IRIS and which values were obtained from HEAST since the different sources receive different levels of EPA validation. As currently presented many of the values are referenced to both IRIS and HEAST; IRIS and HEAST do not duplicate the same toxicity values. It is unclear why a RfD was developed for lead; lead exposures must be addressed using the UBK model for children. It is inappropriate to add insignificant "0's" to slope factors and RfDs.

Table 6-34

The presentation of 0.00E+0 values in this table should be eliminated. If these pathways are not complete for carcinogenic exposures NA should replace 0.00E+0. Per RAGS, all risk values and HI values should be presented in one significant figure. An additional summary table must be presented in addition to this table. This summary table will include the chemical specific risks for each chemical of concern in all pathways which exceed the 10^{-4} risk level or HI of 1 (chemicals which do not exceed 10^{-6} risk level or a HQ or 0.1 do not need to be included in this table).

Table 6-35

In this table and throughout the document the distinction between "likely future" and "hypothetical future" must be eliminated. Footnote 1 should be removed. The title should be changed to Remedial Goal Options and all references to PRG should be eliminated. The limiting criteria in footnote 3 should be 10^{-6} not 10^{-4}.

Figures 6-1 and 6-2

It is unclear why many of the pathways considered complete but insignificant in the previous version of this document are now listed as incomplete. Provide the basis for the change. The heading in this table should be edited to clearly state that the future child and adult resident are onsite residents.

Appendix N4

The subchronic headings should be removed from all tables in this appendix. Also, the presentation of "0.00E+0" as subchronic HIs should be eliminated.

Throughout this document numbers are often presented with insignificant digits added to the significant portion of the number resulting in a number that appears more significant than is appropriate. Insignificant zero values are often added to the right of the decimal in presenting RfDs and CSFs; RfDs and CSF should be presented in the form the reference cites. Per RAGS guidance all risk, HI and HQ values should be presented in one significant figure.

Include the tables and figures in this document in the pagination.

KLUCAS:RICOM2.WP:OLIN CORP FEASIBILITY STUDY DISK:12/2/93

SSRB	OHA	SSRB
LUCAS 12/2/93	KELLER	COLLINS 12/8/93

See marked comments in Keller + appendix)